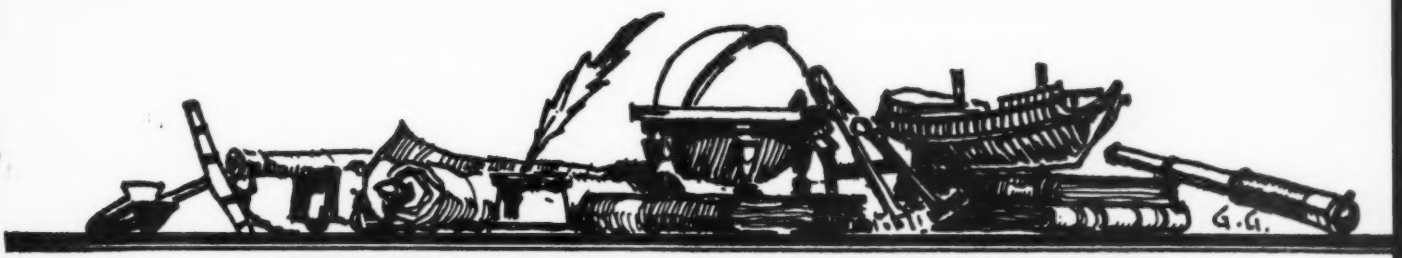

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WERE THE VIKINGS PUPILS OF THE PHOENICIANS?

BY G. ILDSTAD - N.R.G.

Countless stories of the valor and adventures of the Vikings, those mighty mariners of the north have been written and running side by side with those legends have been tales of the little people of the North, the dwarf men. One can only conjecture as to the origin of the little people, were they myths or actual men? It is well known that nearly all myths or legends are founded on truisms, handed down from father to son throughout the ages, and when there are no written records, the facts are bound to be distorted over a period of a thousand years or more.

It is from historians and from inscriptions found on the ancient tombs of Egypt that descriptions of the ancient tribe of the Phoenicians appear to more nearly fit these people than that of any other known people. From whom then, if not from the Phoenicians, did the Vikings learn the art of ornamentation and the delicate arts and crafts so at variance to their fierce and tempestuous nature? Their ships also resembled the ancient Phoenician ships, even to the shields with which they were decorated.

We ask, were the Vikings pupils of the Phoenicians? And the answer could be in the affirmative. To show why they may have been, we will select the Bronze Age as the starting point,

flourished around the year 1600. At least we may apply it to Tyre and Sidon, later Carthage, the Phoenician colony destined to outstrip her motherland both in commerce and seapower. For long range voyages there perhaps had never before existed a people such as the Phoenicians who attained and sustained for hundreds of years their commerce, seapower and culture which influenced the entire ancient world. It is from these renowned people that the Greeks are reported to have taken their alphabet.

In dealing with the history of the Phoenicians we are at a disadvantage, since most of what is known of these ancient people comes from the enemies of this commercial and seafaring nation.

It was during that period when the factories of Tyre and Sidon were at their peak of prosperity, Phoenician ships were scouring the known world of that age in quest for copper and tin for these two all-important metals were needed in the manufacture of bronze. Therefore it was with a dual purpose that the ships of Tyre and Sidon cleared port, one of which was trade and the other, the search for the metals required in the production of bronze. That these mariners did find what they sought we can be assured from many sources. It is reported in Roman chronicals that ore was obtained from rich silver mines in Spain and after Zama and the fall of Carthage, Romans were still able to remove quantities of ore from the rich veins. Historians also point out that tin was mined in Cornwell, England, from these accounts we can trace the daring efforts and explorations of these famous searovers.

When the Phoenicians arrived in the Northland during their wide travels in search of trade, you may be sure that they did not neglect their search for metal whether it was gold, silver, tin or copper. That they did find mineral deposits in Norway, there can scarcely be any doubt. It can be conjectured that the Phoenicians were the dwarf men of the folk lore, since the little people were described as having dark hair and beards and were rulers of the subterranean world. These legendary little dark people, were said to be cunning and deceitful, possessing magical powers which awed the Northmen. It is told that one of the dwarf's favorite tricks, when pursued by the northern giants, was to open a rock as if by magic, spring inside whereupon the rock would swiftly close behind them.

One of their feats which was greatly admired by the savage northmen, was the skill with which they could fashion weapons, ornaments and implements, these were greatly prized by the early native tribes of the Northland. The recurring association of dwarfs with their forges and the skill with which they worked seems rather significant, for in nearly every case where a myth can be traced to its near source we are impressed that it did have a foundation of fact in the beginning. As we delve in the history of the Vikings can we assume that the Phoenician dwarfs were a myth, a legend, or were they a reality, distorted in the telling throughout the ages? It seems logical to assume that where there are no clear and lucid beginnings and where no written records exist, even normal activities have a tendency to become distorted, especially after a lapse of a thousand years or more.

Let us further assume then that the folk tales about these dwarfs had some foundation in fact and that these little people with their forges and skill with metal working, their cunning and their magical powers of opening and closing doors of rocks, were in reality, Phoenicians. Certainly the dwarfs were not native northmen for the Northmen towered over them a foot or more. Furthermore the Northmen had no early skill in working metals, neither were they skilled, during the early centuries, in the art of fashioning weapons or ornament making. This alone could be an important clue to the identity of the dwarfs because these are the very attributes that could identify them as the famed craftsmen from far off Tyre and Sidon. Also the mystery of opening rocks where these dwarfs hid could have been in reality nothing more than the doors to a mine. It is reasonable to conclude that these miners had food, fuel, water and all the necessities of life while working in the mines. It might be argued - why then were these doors not broken down by these strong men of the north. A simple explanation might be that since the Northmen lived in the Stone Culture when the Phoenicians arrived, their implements could have no effect on these heavy doors of stone.

The quality and strength of such doors may be estimated by those actually built by the ancients as shown in the construction of the doors to Tut-Ankh-Amen tomb in Egypt. When Carter broke the Royal Seal of the King and rolled the doors back on their hinges, the doors of the tomb were found to be intact after a lapse of three thousand years.

The Phoenicians were a great colonizing people as evidenced in Spain where their mining stations were located as well in numerous other places, records of their many outposts have long since been forgotten but it is claimed that they maintained one in Ireland and possibly another in Norway. We know that the people of Tyre and Sidon sought minerals in the north and they continued to visit the places where ore could be obtained until the veins were exhausted. From these factors it can be assumed that there must have been a long association between the Phoenicians and the Northmen.

Undoubtedly the Phoenicians must have employed these men of the North as miners, certainly they must have found them strong and useful, after a time they must have become skillful and valuable. Therefore it is probable that some of the people were asked to join the ships as sailors. It is not likely that these offers were spurned, it is altogether probable that they were swamped with eager volunteers, consisting of youths with a longing for the wonderful clothes and weapons that were worn by these strangers from the south. The short cloak with its worked threads of silver and gold, the shining helmets with silver horns with the gleaming moon-disc between, the strong shield and the priceless bronze sword with the fancy jeweled hilts and pommels, these must have been sufficient to turn the head of many a youth. Then too, there was the call of the sea, that great highway of adventure and romance.

It is thought that the Phoenicians and the Vikings landed in Egypt at regular intervals, since descriptions of armour appear in the ten volume history, entitled "Sixty Centuries of Progress", page 325, Vol. I. Pictures are included in the history showing iron studded rimmed shields which furnish a clue as to the period that could not have been earlier than 1400 B.C., although it could have been later. However, the interesting thing about the bas-relief is that the pictures show two types of men on the Phoenician ships, one appears to have dark, florid features while the others are depicted as having blue eyes and flaxen hair. Could they not be the Vikings recruited by the Phoenicians and trained as mariners? Perhaps they even became well enough versed in navigation to stand watch at sea, certainly these men of brawn and bearing from the north must have impressed their masters with the zeal and fury with which they fought. If these were indeed the Northmen, it is probable that they got their start on the sea by hiring out to the men of Tyre and Sidon. It is also probable that the Vikings got their round shields and two edged swords, of which so many were unearthed in grave-findings in the north, from the Phoenicians. Undoubtedly their seatraining was in Phoenician ships and from Phoenician navigators. Therefore it is evident that the Vikings obtained their skill and knowledge of celestial navigation from a long association and intercourse with the culture of these enlightened people of the Mediterranean.

It might be mentioned here that another bas-relief from an Egyptian wall painting, is described by Paul Du Chaillo, in two volumes, titled, "The Viking Age" (out of print). In Vol. I, page 123, appears a brief note of a bas-relief on the Temple of Medinet, Habou, Egypt. Du Chaillo has reproduced a picture of this painting which shows a mighty sea battle in progress. Luckily this one is dated as it records the military and hisical events in the life of Rameses III, either the late 1200's or early 1300's B.C.

The most interesting part of the painting shows the sailors of Rameses as fighting men with horned helmets. The pictures of their helmets resemble those on the rock tracings of the North as well as those that were found in the Thames near Waterloo bridge and now displayed in the British Museum. These horned men in the pictures have no bows but seemed to be armed only with round shields, swords and spears.

So many factors point to the relation between the Vikings and the Phoenicians we are bound to conclude that the Vikings were indeed pupils of the Phoenicians.

THE FLYING FISH PLANS

A Review, by James W. Harbin, Jr.

Volume IV, Number 6 of the Nautical Research Journal featured a history of Donald McKay's clipper ship FLYING FISH that has since proven to be only the beginning of a monumental task of research and perfection of detail for the serious student of sailing marine architecture and sailing ship modelmaker.

John Lyman started the series with a background account of the source of plans (from the collection of the Bergen Sjøfratmuseum, Bergen, Norway) and how they were preserved for future generations of maritime researchers. He continued with factual data as to the vessel's sailing records and cargos over a period of years and her final loss in the China Sea.

A signal hoist (in color) detail of the FLYING FISH was made available by L. W. Jenkins and a reproduction of the painting"FLYING FISH Laying To For a Pilot" by Artist Fred S. Couzzens was made available by Richard C. McKay, grandson of Donald McKay. Ship lines and body plan were made available by John Lyman from data furnished by Mrs. Feagri of Bergen Sjøfartmuseum to our N.R.G. Draftsman Herbert S. Scott, who developed them so well for inclusion in the Journal.

The further details of the FLYING FISH and the clipper ship races by Richard C. McKay - together with an article describing the ship from the Boston Atlas as published November 4, 1851 - rounded off the series for the time being.

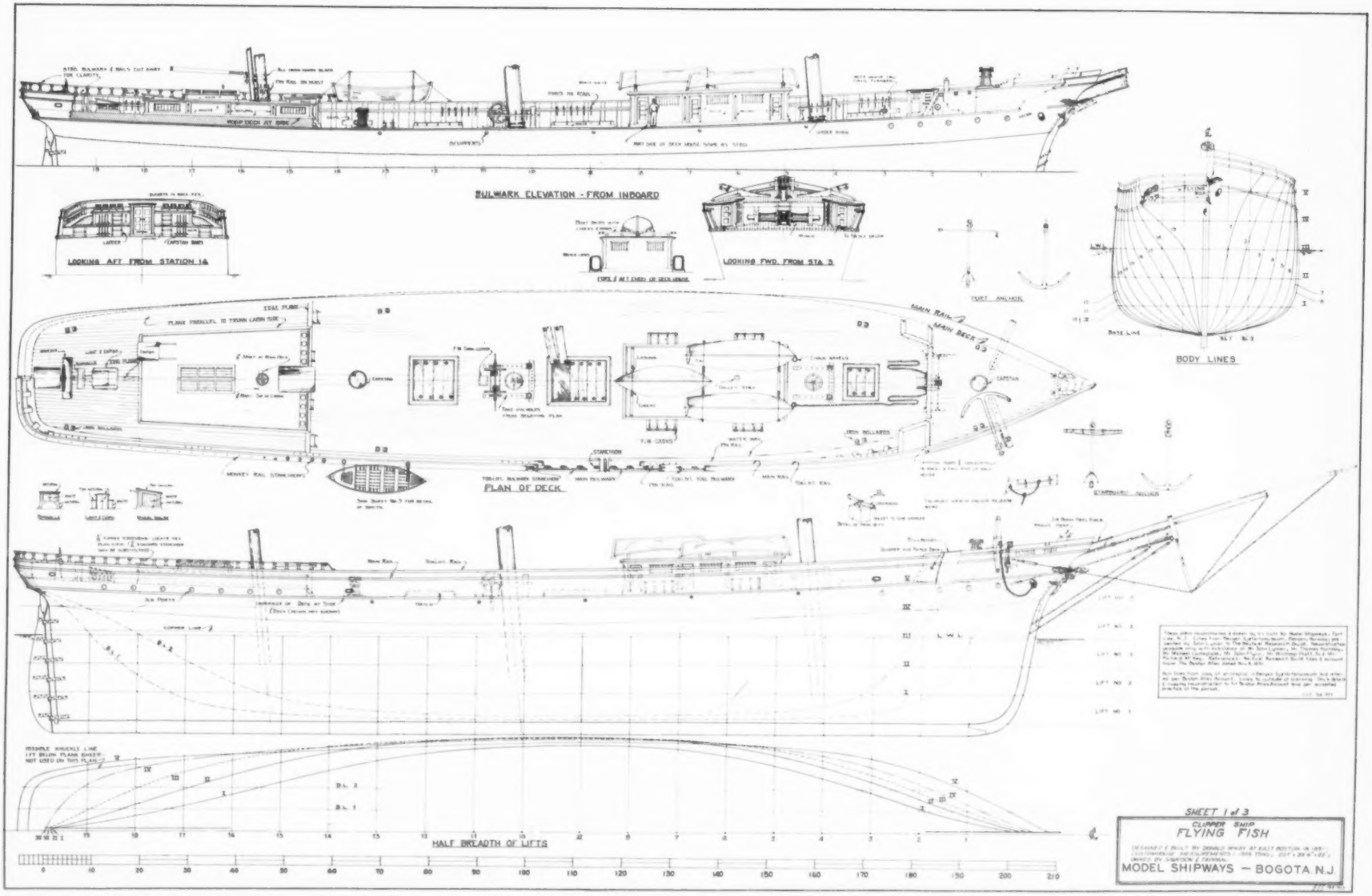
Since that time, our friend and valued member John Shedd went to work with Herbert Scott and proceeded to make the FLYING FISH more available than ever before. It doesn't require more than a casual glance at the developed plans to decide that here is a labor of love and a treasure trove of detail for anyone interested in sailing ship design and history. The two year development of a dream to reality should serve as an inspiration to other members to probe deeper into the records of the past and make them available to others.

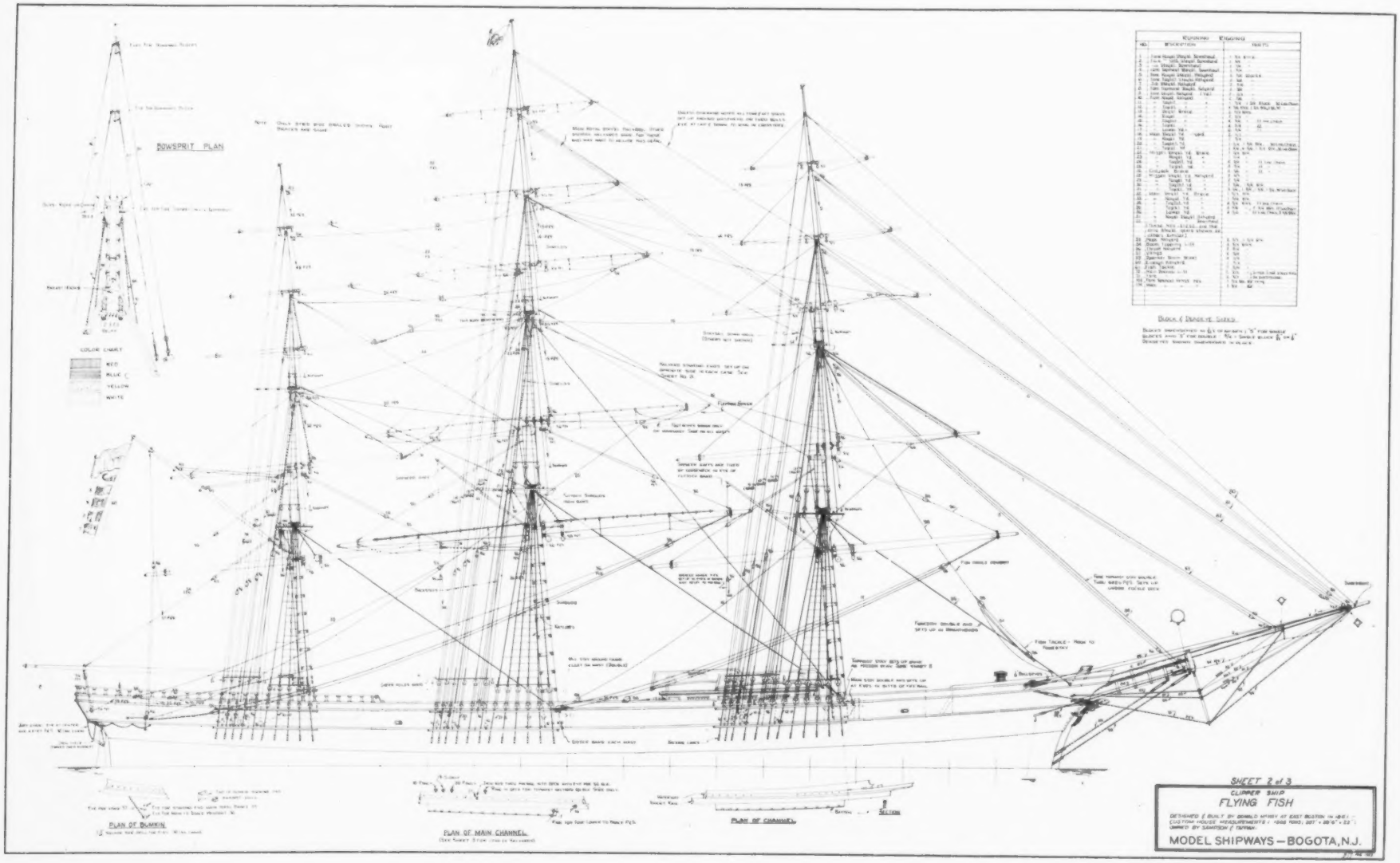
Sheet 1 (of 3) contains all of the factual data necessary for a shipmodel builder to get under way with the hull. The clarity of the drawings and super detail of fittings and gear should satisfy the most exacting modelmaker.

The tremendous strides in providing details for exacting modelmakers is obvious when this sheet is compared with a similar plan of the Flying Cloud published back in 1929. It's true, that in those days shipmodeling was considered a somewhat childish eccentricity, but on the other hand - essential details were probably easier to ascertain than they are today. In any event, the more study that is devoted to Scott's drawings, the more one becomes convinced that here is an opportunity to undertake something well worth while.

In the box immediately below the dolphin striker it has been noted that the plans as reconstructed and drawn by H.S. Scott for Model Shipways of Bogota, New Jersey, resulted from the cooperative effort of lines furnished by Bergen Sjøfartsmuseum through John Lyman, reconstruction with the assistance of Thomas Hornsby, Michael Costagliola, John Flynn, Winthrop Pratt Jr., Richard McKay, Nautical Research Guild files and data from the Boston Atlas dated November 4, 1851. This reference to sources of material and acknowledgment of assistance rendered is most unusual and reflects much credit on the producer and manufacturer for establishing - what we hope - will be a new trend in research development.

A careful examination of the Rigging Plan - sheet 2 (of 3) - of the FLYING FISH immediately impresses the viewer that here is something new in the way of better and more detailed drawings. Mr. Scott shows all of the standing rigging in the conventional and standard black lines. However, running rigging (on the full size drawings) lines are indicated in red, a most unusual and original presentation.


BULWARK ELEVATION - FROM INBOARD
LOOKING AFT FROM STATION 14
LOOKING FWD. FROM STA 3
PLAN OF DECK
BODY LINES
HALF BREADTH OF LIFTS
SHEET 1 of 3
CLIPPER SHIP
FLYING FISH
MODEL SHIPWAYS — BOGOTA N.J.


BOWSPRIT PLAN
COLOR CHART
RED
BLUE
YELLOW
WHITE
PLAN OF BLAKIN
PLAN OF MAIN CHANNEL
PLAN OF CHANNEL
SECTION
RUNNING RIGGING
BLOCK & PENNANT SIZES
SHEET 2 of 3
CLIPPER SHIP
FLYING FISH
DESIGNED & BUILT BY DONALD MCKAY AT EAST BOSTON IN 1851 -
CUSTOM HOUSE MEASUREMENTS : 1948 TONS, 207' x 38'6" x 22'
OWNED BY SAMPSON & TAPPAN
MODEL SHIPWAYS — BOGOTA, N.J.

The contrast in color between the running and standing rigging will undoubtedly bring forth blessings when the modelmaker reaches this stage of shipmodel development. Heretofore, the mass of black lines as shown on conventional plans have proved most confusing to all except sailors and experienced modelmakers.

Another interesting feature relates to the scale presentation of deadeyes and blocks. These particular bits of detail are usually shown on conventional plans in one or two sizes only and for anyone who doesn't care to read descriptive matter while in the process of building a model, the variation and graduation in scale might be easily overlooked until it is too late for correction.

A rather unusual presentation is also apparant in the foremast and mainmast spencer gaffs. These additional matters of detail were picked up by Mr. Scott from the descriptive account of the vessel that appeared in the November 4, 1851 issue of the Boston Atlas. As a matter of fact, the latter article is so detailed, that if sufficient interest is evident among the newer members of the Nautical Research Guild, a re-issue of the article might be accomplished in some future number of the Journal.

One final note before leaving sheet 2 concerns the ships code number in signal flags that are shown flying from the hoist on the Mizzen Spencer Gaff. A color chart has been included so that reproductions may be accomplished without difficulty. This is one of those "touches" that serve to identify a painstaking craftsman.

Sheet 3 of the series contains all of the clean-up details and emphasis not heretofore stressed on sheets 1 and 2. On the port side of the sheet is a diagramatic plan showing the keyed and named leads on the rigging plan. Researchers wishing to know the names of the leads and where belayed, can use the N.R.G. belaying pin plan published for the Sea Witch in the September 1953 issue of the Journal.

The next outstanding features to meet the eyes are the Mizzen and Main Mast details. There are many points of interest presented by Mr. Scott in his detailed analysis of these spars and their various fittings - to say nothing of surrounding gear- and the most careful inspection and study is recommended.

Data sufficient for construction of tops, topmast crosstrees and yards are also present in sufficient variety to answer all questions of the craftsman. Davits and rigging of ships boats are not neglected and a color scheme for the hull and fittings as described by eyewitnesses at the time of launching complete the plan.

In concluding the review, the following has been observed: that here is a job well done through the cooperative effort of interested researchers and craftsmen working together to preserve a bit of this nation's maritime history for the rest of us. The resulting set of plans offer a challenge to all serious modelmakers to strive for better accomplishments by undertaking to model the FLYING FISH.

THE DRAFTING OF THE FLYING FISH
by Herbert S. Scott, NRG

It would be better to say 'Re-Drafting of the FLYING FISH' as it is well-known that lines, and perhaps some details were originally drafted for that famous clipper of Donald McKay's. The story of the finding of the original or copy of the original lines may be found in the June, 1952 issue of the Nautical Research Journal. This is strictly a Guild reconstruction, and shows how the cooperation of the Guild members can accomplish a job.

Knowing that the FLYING FISH would make a beautiful model, with authentic lines, Mr. John Shedd of Model Shipways of Bogota, N.J. asked me to reconstruct her completely for modelers. Starting with nothing but the Boston Atlas account and the lines drawings, I began.

Little is known of the actual layout of a clipper ship. True, there are many drawings for modelers, but details of deck gear, houses, etc. are absent. However, members of the Guild have rebuilt the FLYING FISH, and as far as I am concerned she is as authentic as any clipper lines can be for modelers.

As a draftsman, I became the recipient of data from various points throughout the Guild. From all of this data I laid out the rough draft, holding to the original lines. Rough prints were mailed to members helping on the project with instructions to mail back to me 'proof-read'. And they came back marked all over in red. Some wanted a deckhouse here, another wanted a different capstan, etc., but in the end, all information was sifted, changed for the better, and finally polished into the final gem. The rigging plan presented a problem due to the fact that we wanted something new in model drawing so we colored all running rigging lines in red. The red rigging shows up like a light and is a great aid to those modelers who have trouble in running down leads of rigging.

As a draftsman I take credit only for the drawing which took six months spare time. The FLYING FISH is the spirit of the Guild and if I should ever build a clipper, I would choose her; knowing that she is authentic as can be produced by those who really love the era of sail. For those who aided in this project I refer to the drawings.

Spar Dimensions of DUNDEE

Through the courtesy of Mr. James D. Boyd, Curator of the Dundee Museums and Fine Art Galleries, the following spar details of the four-masted bark DUNDEE are furnished. Mr.Boyd states these were taken from an old manuscript notebook of the late Captain Sir Charles Barrie and represent DUNDEE as she was when launched in 1882. Sent to Guild by Winston Langdon.

"D U N D E E" - 4 masts x 100 A.1. Iron. Built by Thompson, Dundee in 1882.

5' 0" ~~⊕~~ 5' 6" Draft 21' 0".

Reg. Dimensions 291 (B.P. 280) x 43 . 15 x 23. 45.
Bowsprit. Housing to Cap. Cap to Cap. 24 x 24 x 13.6.
Jibboom outside 16 x 9 x 2.
Masts fore. 23.7 x 48.3 x 17 = 88.10 diam. 23" - 30" 23½ 21¼.
Main. 22.3 x 49.8 x 17 = 88.11
Mizzen. 21.6 x 50.6 x 17 = 89
3 Topmasts 48 x 8 head = 56 diam. 19" to 14 3/4"
3 Topgallant. 27.3 x 17.6 x 4.9 = 49.6 diam heel 14 3/4".
Jigger (pitch-pine) 22 x 55 x 12 = 89 diam. 19" - 26" .19" - 17"
Do. Topmast 41x15.6 x 10.6 x 4.6 = 67.

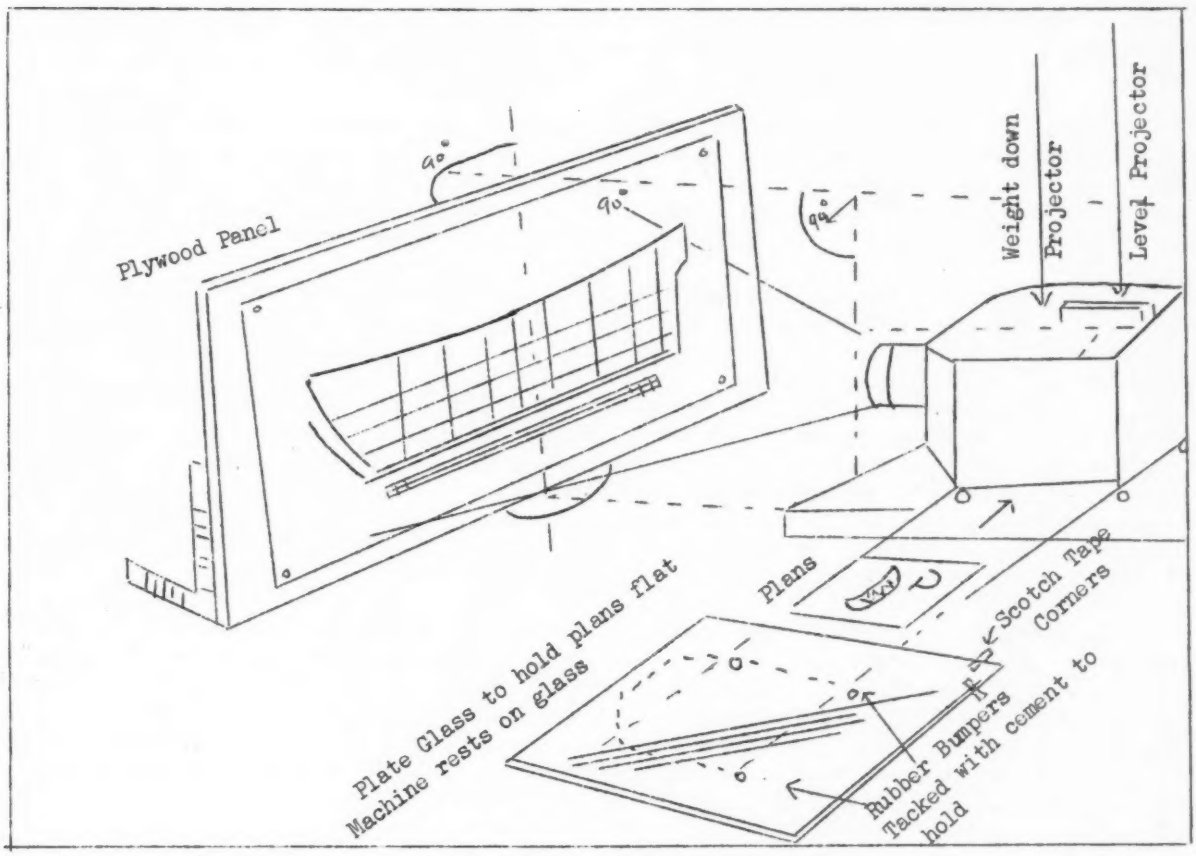
Yards lower.	85 (Arm 2'0"	)
Lower	75 x 1	) Iron lengthened when renewed.
Upper Tops	71 x 3	)
T. Gallt.	60	)
Royal	48	) Pitch

Jigger boom. 44.6 Gaff 33.6 x 4.9.

Rake of masts fore 7/8 - 1' 0"
Main 1"
Mizzen 1 3/16"
Jigger 1½"

Hatches 8 x 8 - 12 x 12 19.6 x 12 x 12 x 10.
1/S No. 1 Tyne Nov. 1887 No. 2 Dundee 1891 3 Calcutta 1894 (December)

Sold to R. Mattson, Marieham Aland for £6,400 less £50 Comm. to Lindstrom & Coy. W./Hartlepool.



REFLECTORY PROJECTION
By Joydon R. Claridge

In almost every issue of the Journal, there has been some mention relative to the acquisition of ship plans and the reproduction thereof. My experience over a period of fifteen years has been somewhat on the painful side - in terms of time and money - in respect to obtaining working plans for ship modeling as enlarged from plates contained in rare books.

My first efforts to obtain accurate enlargements were via the photostatic method. It was my usual practice to take "book size" plans to the local photostat print shop and request blowups to a predetermined scale. On relatively small enlargements, this method was satisfactory for my purposes. In most instances of large scale enlargements, the usual resulting prints were a beauty to the eye, a drain on the purse and of doubtful value in the shop. I concluded, in time, that this method would never satisfy me as long as the factor of paper shrinkage could not be accurately controlled in the photostat method.

The next step was to follow the advice of a friendly photographer and obtain shrinkproof photographic enlarging paper and proceed to blow-up my plans via the usual methods. After many hours of developing, fixing, washing, drying, printing, etc., I was extremely disappointed to learn that once again, distortion had reared its ugly head and there were no resulting plans suitable for my construction purposes.

From that point on, attempts were made to solve the problem by means of other conventional and accepted drafting practices, but one has to have a yen for the drawing board to really enjoy the process.

Eventually, I was successful in obtaining a piece of apparatus that was the answer to my requirements and has proved very satisfactory for my purposes. The machine was manufactured by Keystone Camera Co. of Boston, Massachusetts and is called a Keystone Pictograph, Model 441. It is a reflecting projector rated at 300 watt lighting capacity and is capable of projecting printed matter, drawings or pictures up to 5 inches accurately and without distortion. The basic apparatus is a modernized version of the old fashioned "magic lantern" and is obtainable through most large photographic dealers at moderate cost.

Actual operation of the device is illustrated in the diagramatic sketch that accompanies this article. Briefly, the print to be projected is placed in the bottom of the machine, the lights turned on, and the enlargement appears on a screen or side wall of the room, opposite the lens. The Keystone product can equal in performance that of other types of similar equipment presently available at far greater cost.

Considerable experimentation was necessary to develop a satisfactory procedure for producing accurate projection. The first step in the recommended process is to acquire material to do the job. The projector as described is essential and in addition thereto, it is important that rubber bumpers or rests are firmly attached to the base of the machine. These have several important functions. First, they are necessary to provide ventilation for the lamps as the apparatus is not blower cooled and secondly they absorb some of the vibration while the machine is in operation. The third reason will be given later. Other material should include a substantially constructed table or chest to hold the projector, a sheet of heavy clear glass large enough to support the apparatus, rubber cement, plumb bob, level, lead weights, backing or drafting board, thumb tacks or masking tape and heavy white drafting paper.

In setting up, mount the plan board against a well or similar firm backing so it will not change position while in use. The board should be at right angles to the floor and high enough so that the lens of the projector will center at all times. Mount the drafting paper on the board with drafting tacks or masking tape - as preferred - only be sure the final effort produces a surface that is smooth and clear of ripples. Allow sufficient floor space on either side of the board so it will be possible to stand and sketch in lines with a minimum cut-off of projected light (lines).

With the board in place, move the table (with projector thereon) into position facing the board. Lining up the apparatus with the board can be best explained by advising a thorough study of the accompanying sketch. For perfectly obvious reasons, all lines eventually projected will have to be in order otherwise the plan developed will be out of true and of no value. It is suggested that after squaring up the lens with board and floor, a piece of graph paper be mounted in the holder and projected on the drafting board. It will be found that by moving the table holding the apparatus forward or backward, the projected image becomes smaller or larger in the same order. It will also be discovered that with every movement of the table, there will have to be a corresponding adjustment of the lens assembly in order to maintain sharp focus. If there is any variation of size in the projected grid pattern, miner adjustments to true up the pattern may be accomplished without too much trouble.

Having acquired some familiarity with the process as suggested, the next operation involves setting up the apparatus for a plan projection. If the plan to be used can be contained in the copy holder, cover the print with a suitable sized piece of glass to prevent wrinkles - insert holder in camera and proceed to project, observing some cautions that will be hereafter suggested.

If the plan to be projected cannot be contained in the copyholder, remove the latter from the machine altogether. Place the plan flat on the table and lay a heavy sheet of clear glass over the portion of the print to be projected. Be sure the glass is clean on both sides in order to obtain maximum print clarity. Place the apparatus carefully over the plan so that the opening in the bottom of the machine is directly over the portion of the plan to be projected. After suitable trial runs to assure the projected image is all that is desired, tack the bumpers on the machine to the glass with a spot

of rubber cement on each bumper. The latter operation is suggested as one method to cut down vibration creep. Another method of dampening movement is to place lead weights on top of the machine.

It has already been noted that the projector is rated at 300 watt light output and with no blower to keep the assembly cool, some care must be exercised during operation. Experience will teach the user that projection time is limited. If operating periods are too long, the glass will be cracked by the heat generated. Furthermore, prolonged projection results in the apparatus making like a "ouija board pointer" all over the table.

After the apparatus is in "position" for a workout, turn it on and take position at the side of the drafting board. In tracing out the lines of the plan, it will be necessary to stand to one side in order to stay out of the range of the image. This is not as difficult as it may appear, as it happens that your hand is generally either above or below the line and your marks can be traced with great speed. Be careful when stepping back to admire your work that you don't kick the projector out of position and thus penalize yourself into starting all over again.

When sufficient lines have been sketched on the board, remove the paper and fill in solidly as required using flexible splines or ships curves to complete the working drawing. Of course it really isn't necessary to use any flexible rules or complicated compound curves in the final completion of the drawing because a model can be built from a "rough hand" sketch if the lines so drawn follow the curves accurately that have been projected by the apparatus. I have found that one or two inch dashes serve my purposes quite well and it is sometimes possible to fair up lines freehand style without recourse to drafting aids.

Secretary's note: Mr. Claridge advised us his Keystone Pictograph cost him $18.00 but a similar machine on sale in the District of Columbia was priced at $30.00 new. It is believed that anyone living in a fairly large city can obtain the apparatus at substantial savings provided they shop around and contact dealers in used equipment.

Comments on ARCHITECTURE OF THE CLIPPER SHIP, by Willis L. Nye
by F. W. Thober

The statement that the clipper ships were not costly to operate would be hard to support. Clark, in "The Clipper Ship Era", mentions the crew of the CHALLENGE as consisting of 56 seamen and 8 boys before the mast, and that of the SOVEREIGN OF THE SEAS of 80 seamen and 10 boys. It was only during the period of the gold rushes to California and Australia when speed was at a premium and rates excessively highthat ships could afford to carry such crews. By the middle fifties, when rates were falling to a more normal level, both the sail plans and the crews of these ships were drastically reduced. In the seventies and eighties, ships with carrying capacities comparable to the two mentioned above were operated with crews of twenty to thirty hands before the mast. It is true that the later ships did not make as fast passages as the clippers, but they were not so far behind as is commonly supposed. Several of them averaged around 120 days for the New York to San Francisco run, and most were in the 120-140 day range. Few of the clippers averaged under 110 days, and many were over 120.

It is doubtful if many early ships had block coefficients as high as. 85. To have such a high coefficient, a vessel whose length was four times her beam and whose bottom was flat and bilges square would have her water lines at bow and stern meeting at an angle of approximately 90 degrees. Almost all the ships of the pre-clipper era had considerable deadrise and rounded bilges, and few had such blunt water lines, so their block coefficients must have been considerably below .85. In the clippers, the block coefficient was lowered by their sharp water lines, but raised by their flat bottoms and hard bilges.

There is no doubt that the advantage of high freeboard in drier decks was offset by the disadvantage of increased windage, and that the designers of the American clipper

ships achieved a hull design which was reasonably dry without being too high in the water for efficient sailing performance. However I do not see that there is any connection between freeboard and deadrise. Many of the early clippers had low freeboard and great deadrise, perhaps the most extreme example being the NIGHTINGALE with her almost V-shaped bottom. These ships sailed well enough, but the disadvantage was that they lacked carrying capacity. The later clippers with their flatter bottoms and less rounded bilges were found to sail as well and to have much larger capacities. The flat bottomed type was not particularly a clipper ship development. It was rather a return to a type of hull that had been developed earlier in the packet ships. An examination of the lines of the YORKSHIRE in Cutler's Greyhounds of the Sea and of QUEEN OF THE WEST in Chapelle's History of American Sailing Ships will show that the underwater bodies of these packets, both built in 1843, is very similar to that of the later clippers. The most noticeable difference is in the longer sharper bows of the clippers. This difference tended to become less as time went on, and the clippers of the late fifties and the "Down Easters" of the sixties and after were more like the packets of the forties than like the clippers of the early fifties. Their topsides were built with low freeboard and considerable sheer, so they looked like clippers, but under the water there was not much resemblance. On the whole, the later ships were of a more efficient and wholesome type than the extreme clippers. In spite of their slower speed, they were more successful in competing with steam, and continued to be built and operated until the end of the nineteenth century.

It cannot be said that flaring bows and sterns were a specific characteristic of clippers. In this also they were anticipated by the packet ships, many of which had upper decks that were almost rectangular in shape, with broad square sterns and bows only a little less square.

The metacentric height of a vessel is the vertical distance between the metacenter and the center of gravity of the ship. For the ship to be stable, the latter must be lower. Therefor a lowering of the center of gravity would increase, not decrease, the metacentric height. The greater the metacentric height, the stiffer the ship. It should be pointed out that extreme stiffness is not desirable, either in a sailing vessel or a powered ship. In either it causes a jerky, uncomfortable motion in a seeway; and in a sailing vessel it puts a great strain on the spars and rigging.

In conclusion, it can be said that the clipper ship was a remarkable development in ship design. It was phenomenally successful for the work it was designed for, but that work lasted only a few years. When that time had passed, the clipper was soon succeeded by ships of a more conservative type better suited to the everyday job of carrying cargoes economically. But the clipper did have a great, and generally beneficial effect on the ships, both sail and steam that followed it.

GUILD SLOP CHEST

From Thomas Hornsby - Cheltenham, Pennsylvania. For sale - Jewelers Lathe, "PENNANT", 3½", swing, 5½" center to center, tip-over style tool rest, index head, five collet chucks; rheostat; Racine 1/16 h.p. reversible motor, AC-DC, mounted on stand. All in nice condition - price $57.50.

From John R. Stevens - 165 Ronan Ave., Toronto 12, Canada. For sale - "Mariners' Mirror" 1946 to 1951; vols. 32 to 37, plus January 1952, vol. 32 bound but not covered; rest in wrappers as issued - $18.00. Also "American Neptune" 1940, 1941, 1946-1950, plus Jan. 1951, vol. 6 bound in green buckram - rest as issued - price $27.00

DUES -

It may have been a mistake to staple the pink dues slip under the first page of the December 1953 issue because so many of you have overlooked it. Next time we will place it in the fold where all can see it - and pay it.

NAUTICAL RESEARCH GUILD
Dedicated to the Lore of Sail
SECRETARY'S MONTHLY LETTER
THE SECRETARY'S MONTHLY LETTER WAS ESTABLISHED IN 1946

THE NAUTICAL RESEARCH JOURNAL is published monthly by the members of the Nautical Research Guild. Membership dues, including the Journal, are $5.00 a year. New members will receive the numbers which have previously been issued in the current volume and the numbers for the remainder of the year.

Dues are payable in January of each year and are in force until the written resignation of a member.

The opinions and assertions in the Journal are the private ones of the writers.

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Letter to the Secretary from Hazel Erratt, Jerico Beach Hospital, Vancouver, B.C.

Bill Mathews asked me to drop you a line to thank you so very much for your letter and the marvelous gift of the little hand-vise. Bill was very ill at the time and in an oxygen tent and hemorrhaging very frequently. I was nis night nurse and he called me in and showed it to me. He talks about the Guild so much and has let me read some of the letters from the boys. My husband and I know Bill very well and have his model of the BLUENOSE - it's a beauty. I wish I could tell you just how much the Guild and its members mean to Bill, the kind letters and gestures of friendship are something very special to him. I have written Dr. E. A. Petersen for Bill to thank him for the autographed copy of his book "Hummel Hummel". It was nip and tuck for Bill for a while but he has not bled now for nearly a week and is still in the oxygen tent but is slowly regaining his strength. It was so like him - he's very thoughtful - to ask me to write as soon as he received your letter and gift, even though he could hardly speak. I should like to add my personal thanks to you and through you to the other members. I want you to know how much pleasure and interest you have given Bill and like him hope that the thoughtfulness the members send into other lives comes back into their own. In my contact with Bill, I will do my best "to keep her as she goes".

(Bill's address is: Jerico Beach Hospital, 4500 Marine Drive, Northwest, Vancouver, B.C., Canada. Bill was introduced to the Guild in the Secretary's Monthly Letter Page of the January, 1954 issue.

A SLOP CHEST ITEM

From Richard T. Shaylor, 16 South Sacramento Boulevard, Chicago 12, Illinois. The drawing and the data on the "English Swivel Gun" was of much interest to me. Long ago when we used to exhibit ship models here in Chicago, I had an idea that it would be interesting when I was showing my model of the MAYFLOWER to include other objects of interest in connection with it and with this in mind, I purchased an old blunderbuss through the mail thinking it would be like those carried by the Pilgrim Fathers. But I was very disappointed when I received a short, gosh old heavy thing, that looked more like a young cannon and I doubt that if anyone could hold on to the thing if he ever fired it. I am sure that no Pilgrim would ever lug it around; one blast from it at a wild turkey, and turkey, tree and half the countryside would be blown to bits or filled with scrap iron. Well, I stood it in the corner of my hobby room and as the years went by, and many ship-model club meetings, it soon became half full of cigar, cigarette butts and gum wrappers, etc. To me it was an unwanted child in my collection of things nautical. True, I did hear and was told that such guns were used to clear decks or repell boarders, but I was not interested and it still stands in the corner. I would be happy to sell it or better yet, to swap or trade it for something like a ship's bell, ship's clock or perhaps some books, but I think that I have most every book printed on ships. The gun I have is almost the same dimensions as the one in the drawing, however it has the flint lock in place of the percussion lock, but it does not have a swivel attached or the gunmaker's name-plate. Yet, there are the same arsenal marks on the barrel; the lock is in fine working order, only the hammer screw needs repairing, to hold the flint tight and the word "Tower" is on the lock-plate. This may interest some of the members who may write me for further details.

THE ROYAL HAWAIIAN NAVY

From material supplied by Elaine Fogg
from Herbert G. Purcell

The most incredible navy that ever existed outside of a Gilbert and Sullivan operetta was certainly the H.M.S. "Kaimiloa", entire fleet of King Kalakaua, who was regent during Hawaii's last years as a kingdom. The ship was the only armed floating evidence of sea power - larger than a war canoe - the kingdom ever had on the high seas.

The Kaimiloa was certainly unusual as a naval vessel. Originally, the ship was built in Scotland and launched in 1872 under the name of "Firebrick". Capacity was rated at 291 tons and main engine developed 171 horse power. Fifteen years later- while engaged in the inter island guano trade - and under another name of "Explorer", she attracted the attention of King Kalakaua.

The merry monarch had also been tramping around the world, heretofor and had returned to his kingdom with visions of splendor and a fresh slant on how foreign affairs were conducted in well-ordered countries. Just prior to taking care of his naval ambitions, he had himself and his queen crowned in 1883 and thereafter started working on a sort of Monroe Doctrine for the Pacific, with Hawaii playing a leading role. During this modest reach for space in the sun, the thought occurred that a navy might come in handy.

On January 25, 1887, the publishers of the "Hawaiian Gazette" pointed out "The price paid for this slow specimen of naval architecture is reported as $20,000. The ship, under most favorable circumstances, can attain a speed of five miles per hour on a consumption of six tons of coal per day and cannot get very far from home port without the services of a tender carrying additional fuel. Furthermore, the tender will have to maintain a sharp lookout to make sure this fast steamer does not pass out of sight - astern".

King Kalakaua ignored the Gazette's pessimism and proceeded with plans to develope his navy. Four muzzle loading 6 pounders from Iolani Barracks plus two gatling guns were mounted on the decks of the vessel. Altogether, about $50,000 was expended in transforming the sea-going tramp "Explorer" into H.M.S. "Kaimiloa". On April 23, 1887, the ship was commissioned as a "vessel of war" and placed under the command of Captain George E. Gresley Jackson, about whom it was once said, "He took sights occasionally but never bothered to work out his position."

Captain Jackson was said to have been a former British naval officer - which is a matter of doubt - but certainly the records are positive on the point he was former master of the local reform school. This officer's most distinguishing talent seems to have been a decided capacity for okolehao - a native fermented beverage. The "Kaimiloa's compliment was established as 67 men, but since naval training was a refinement that the Hawaiian Royal Government had not heretofore taken care of, few of the crew were graduates from the local reformatory.

In those times, the Sandwich Isles were a peaceful kingdom and there wasn't much for a navy to accomplish. During this interlude, the royal vessel doubled as a pleasure barge. When employed on such voyages some uncertainty existed as to which should be left behind - the ammunition or the okolehao, as there wasn't room for both. There is no doubt but that the ammunition remained on the dock.

It has been said that at least on one occasion, the befuddled commanding officer determined his homeward course by following the empty bottles tossed over on the outbound trip. This method of navigation was never endorsed by Bowditch but at least there were extenuating circumstances at the time. It was shortly after this that King Kalakaua sent his navy forward to challenge three great world powers - United States, Great Britain and Germany - on the question of status for the island of Samoa.

The King had previously sent a protest to all leading powers relative to further annexation in the Pacific, pointing out that Hawaii claimed the exclusive right to assist neighboring - though scattered - islands in all efforts to improve their political and social conditions. Great Britain and Germany were quite pointed in advising Kalakaua to keep out of the argument and away from Samoa. His Majesty, no doubt delighted with such recognition and attendant publicity, ordered his envoy extraordinary to Samoa aboard the "Kaimiloa" on May 18, 1887.

As it later developed, the envoy wasn't the only "extraordinary" incident of the trip. A log of the voyage was maintained by Lt. Sam Makai, who attained such status in a single day without the usual nautical preliminaries. This Log was presented to the Territorial Archives in 1925 by the former Princess Kalanianaole. In any event, H.M.S. "Kaimiloa" arrived at Samoa on June 15, 1887. A German gunboat already present, signalled, requesting identification. Officers of the Royal Hawaiian Navy ignored the signals and maintained course until the German ship fired a shot across the bow of the "Kaimiloa".

Robert Louis Stevenson described events thereafter thusly, "The Kaimiloa" was from the first a scene of disaster and delapidation. Stores were sold, the crew revolted and for the greater part of the night, the ship was in the hands of Mutineers with the secretary laying in bonds upon the deck." The Germans sent over a boarding party to restore order. The newly released ambassador ordered the resident envoy to yield his position and take off for Honolulu aboard the "Kaimiloa", but no one was successful in persuading the officers and crew to obey the order.

Finally, on August 8, envoys, missions, officers and crew left Samoa for Hawaii via an unauthorized call at Pago Pago. This final flaunting of authority resulted in a fadeout of King Kalakaua's dream for Hawaii's supremacy in the Pacific. The Maimuloa was decommissioned and turned over to the Interior Department on October 1, 1887. After five months and seven days of service at a cost of over $80,000 the only thing accomplished by the "navy" resulted in a decoration called the "Grand Cross of the Order of Oceania" which was a fanciful concoction dressed up by King Kalapaua.

The "Kaimila's" career after decommissioning was less exalted. In 1902 the ship was purchased from Inter-Island Steamship Co. by Matson Lines for use as an oil tender. Six years later she was a sunken coal hulk and finally in 1910 the hull was sold by Associated Oil Co. for breakup. The final report indicates the hulk was burned for her copper in 1912.

WE HAD COMPANY - -

Captain P. A. McDonald of Seattle visited the Guild headquarters the other day - he was accompanied by his daughter. In 1933 we visited the captain aboard his ship, the MOSHULU at Seattle.

The Captain answered many questions and fully explained the detail of working his big ship and many landsman's questions - we wish all our "deep sea arm chair sailors" who have never crossed an ocean could have been present.

We take this opportunity to invite Guild members to pay us a visit this summer -- whether they have crossed oceans or not.

Harry D. Hamilton

INTRODUCING NEW MEMBERS

Dana L. McCalip, 4727½ Ellis Ave., Chicago, 15, Ill. "Before I give you my interests, I would first like to tell you a little about myself. I am seventeen years of age and I am a senior in the Hyde Park High School in Chicago. Because of my age I will not be as experienced and as well informed as your other members. I have built several models and I have been told that they are rather good considering what I had to work with. My special interest is shipmodeling and I am most interested in the fine detailing of deck work and fitting and the various types of sailing rigs."

Andrew J. Hoigard, Jr., 1146 Gunderson Ave., Oak Park, Ill. "Modeling sailing ships. I am particularly interested in sailing craft of the Great Lakes and Chesapeake Bay regions; I am doing research, primarily (and naturally), on the former region and constructing the appropriate models. This is not a hard and fast program and anything pertaining to sailing vessels proves of interest to me".

Eric Winfield Babcock, 64 So. South Carolina Ave., Atlantic City, N.J. "Clipper ships; mainly Donald McKay's and those of the English around 1900. Naval Gun Ships: Early U. S. Navy--Ancestry: Born and raised in Chelmsford, Mass. The birth state of many sailing ships. Parentage, well associated with the old days of sail. Three were captains of which two were lost at sea. Currently working on model of the FLYING CLOUD for the past six months — many more to go."

Dr. J. R. Ferber, 283 Fulton Ave., Hempstead, New York. "I am interested in all sail vessels carrying armament pre. 1850."

Thomas H. Petersen, 5356 Parmerton Ave., Temple City, California. "Sail ship models in miniature. Revolutionary period and clipper era. Models built: WANDERER, English Revenue Cutter and GOTSTAD Viking Ship." We are indebted to Mr. Petersen for the drawing of the Viking on the cover page of this issue. Mr. Petersen is the brother of Olav T. Petersen, the Permanent Chairman of the Southern California Group of the Guild.

Edmund Merchant Fowler, 512 - 33rd Street, West Palm Beach, Florida. "I am a deep sea diver with a love of sailing vessels and small seagoing vessels, inherited from seagoing ancestors. I am interested in planked up model building of contemporary working vessels with the ultimate end of building a group of representative freight, fishing, sponging and oyster vessels. Also, have a great interest in big coasting schooners of the period 1865 to 1920 -- the big four and five masters - a few of which I have had the pleasure of going aboard."

Sawyer Free Public Library, Gloucester, Massachusetts. We are proud and honored to have the library of this famous fishing port enroll in the Guild.

Robert P. Schur, 31 East Main Street, Patchogue, New York. Mr. Schur states he is interested in sailing and historical research of Long Island.

Changes in Roster

A. R. Nichols (summer address) West Hampton Beach, N. Y.
Capt. M. A. Edson, Jr. change to 3077 Cleveland Ave., N.W. - Washington, D. C.
W. L. Carter change to 304 Canna Drive, Montgomery, Alabama
Ronald P. Moore - change to 3408 Floyd Ave., Richmond, Virginia.
F. Sheldon Drew change to 309 Main Street, Brockton, Mass.
Miles R. Mayberry - change to 3634 N.W. 15th Street, Oklahoma City, Okla.
Russell M. Attwool - 515 Germaine Ave., Toronto 12, Canada
H. C. Wagner, change to 5704 Seminole Street, College Park, Maryland.
H. Harrison Huster to 100 Hudson St., New York 13, N. Y.

From Tom Hornsby - The Philadelphia Ship Model Society is running a model show at the Free Public Library, Philadelphia. All the Guild members of the Society will have models on exhibit; Robinson, Watson, Mumma, Lazet and Hornsby - so the Guild is pretty well represented.